The Examiner acknowledges that Sato et al. does not expressly disclose the "optical density" recitation of the independent claims. The Examiner asserts, however, that "the material of the references would inherently possess" the claimed optical density.

Applicants respectfully disagree. The Sato et al. references do not inherently disclose a light-shielding layer having an optical density of 3.3 or more.

There is no disclosure in Sato et al. that the metal particles disclosed therein could be or were used as a coloring agent, and accordingly the light-shielding layers of the Sato et al. references cannot achieve an optical density of 3.3 or more by using metal particles.

Dark-hued coating materials used for the light-shielding layers of the Sato et al. references are described in column 8, line 66 - column 9, line 11 of the '992 patent, and in claim 11, 14 and column 8, line 59 - column 9, line 4 of the '649 patent. A dye or a pigment having thick hue is contained in the dark-hued coating material as a coloring agent. Examples of the dye or pigment include carbon black, graphite, vanadium trioxide, manganese dioxide, molybdenum disulfide, and triiron tetraoxide, but metal particles are not disclosed here.

The '992 patent discloses that a light-shielding layer may include electrically conductive fine particles in addition to carbon black, and examples of the electrically conductive fine particles include metals such as gold, platinum, palladium, silver alloys, copper or nickel (column 9, lines 25-30). However, there is no disclosure that these metal particles can be used as a coloring agent.

The '992 patent describes that if an electrically conductive material such as carbon black is used as a pigment in a dark-hued coating material, the dark-hued layer exhibits electrical conductivity. However, there is no description that metal particles can be used as a pigment.

In addition, it was not common in the art to use metal particles as a black pigment at the time the invention was made. "Ganryo Binran (Pigment Handbook)" (Nihon Ganryo Gijyutsu Kyokai Ed., Seibun Shinko Sha, 1989) identifies eight kinds of pigments, such as carbon black, under the entry of black pigments, but not including metal particles. With respect to the color of metal particles, the color of gold colloid particles is usually red, and could be dark purple or blue depending on the size and shape of the particles (Masayuki Nakagaki and Kiyonari Fukuda: "Coroido Kagaku no Kiso (Basics of Colloid Chemistry)", 4th ed., Dainippon-tosho, 1973.) Therefore, gold, which is exemplified as a metal particle in the '992 patent, could not be used as a coloring agent because a light-shielding layer must be black as described as a black hued layer.

Although metal particles can become black under special conditions, Sato et al. does not mention the use of any special kind of metal particles. Accordingly, the metal particles of Sato et al. were not used as a coloring agent.

Second, each of independent claims 1, 10, and 15 recites that the light-shielding layer has a film thickness of 0.9 μm or less.

The Examiner acknowledges that Sato et al. does not expressly disclose the "film thickness" recitation of the independent claims. The Examiner asserts, however, that "the material of the references would inherently possess" the claimed film thickness.

Applicants respectfully disagree. The Sato et al. references do not inherently disclose a light-shielding layer having a film thickness of 0.9 μm or less.

For example, the light-shielding layers disclosed in the Examples of Sato et al. (the '649 patent) cannot have a film thickness of 0.9 μm or less as recited in present independent claims 1, 10, and 15; instead the thickness would be 2.4 μm to achieve an optical density of 3.3.

In Example 1 of the '649 patent (column 16-17), a black-hued coating material (Y-1) containing carbon black is used to produce a light-shielding layer. The thickness of the light-shielding layer is calculated to be 2.4 μm insofar as the specific gravity of acrylic resin, melamine resin and triethylamine is 1; the specific gravity of carbon black is 1.8 ("Ka-bon Burakku Binran (Carbon Black Handbook)", Ka-bon Burakku Kyo-kai Ed., Tosho Shuppan, 1971); and the covering power of carbon black is 9.3 /μm (experimental value).

In Example 7 of the '649 patent (column 18-19), a black-hued coating material (Y-7) containing carbon black and nickel particles is used to produce a light-shielding layer. The thickness of the light-shielding layer is also calculated to be 2.4 μm insofar as the specific gravity of acrylic resin, melamine resin and triethylamine is 1; the specific gravity of carbon black is 1.8; the specific gravity of nickel is 8.9 ("Iwanami Rikagaku Jiten", Ryogo Kubo et al. Ed., Iwanami Shoten, 1987); the covering power of carbon black is 9.3 /μm; and the covering power of nickel is 38.4 /μm (calculated value).

As shown above, the thickness of a light-shielding layer in Sato et al. is far larger than 0.9 μm, and accordingly a film thickness of 0.9 μm or less and an optical density of 3.3 or more, as

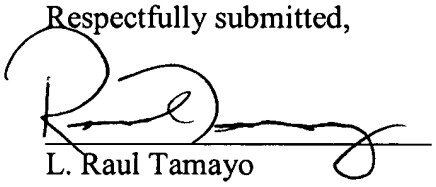
recited in the present independent claims, cannot be achieved with the light-shielding layers of Sato et al.

For the foregoing reasons, Applicants request reconsideration and withdrawal of the §102 rejection of Claims 1-19.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



L. Raul Tamayo
Registration No. 47,125

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

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CUSTOMER NUMBER

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